Smith Bagley, Inc.

E911 Location Accuracy Progress Report
47 C.F.R. § 20.18(i)(4)(ii)
PS Docket No. 07-114

Smith Bagley, Inc. ("SBI") is meeting compliance deadlines prescribed by the Federal Communications Commission in *Wireless E911 Location Accuracy Requirements*, Fourth Report and Order, PS Docket No. 07-114, FCC 15-9 (released Fed. 3, 2015) (*Fourth Report and Order*), and codified in 47 CFR § 20.18(i), *et seq*.

SBI works diligently and covers costs necessary to provide public safety with accurate location data for emergency callers. Over the past twelve months, SBI has timely performed its *Fourth Report and Order* location accuracy obligations and has submitted reporting and compliance documentation to the FCC by the following deadlines:

February 1, 2018

A Non-Nationwide Carrier Live 911 Call Report was submitted to the FCC in PS Docket No. 07-114, providing aggregate live 911 call data covering reporting period July through December 2017. As a non-nationwide CMRS provider that does not provide coverage in any of the six Test Cities, and in accordance with 47 CFR § 20.18(i)(3)(ii)(E), SBI's 911 live call data is collected and reported based on the largest county its service area footprint. The report was sent to the National Emergency Number Association (NENA), the Association of Public-Safety Communications Officials (APCO) and the National Association of State 911 Administrators (NASNA).

April 3, 2018

In accordance with 47 CFR § 20.18(i)(2)(i)(B)(2), SBI had begun to provide dispatchable location or x/y location information within 50 meters for 50 percent of all wireless 911 calls.

June 4, 2018

As a non-nationwide CMRS provider that does not provide coverage in any of the six Test Cities, and in accordance with 47 CFR § 20.18(i)(2)(iii), SBI submitted to the FCC certification that as of April 3, 2018, it did not provide service or report live call data in one or more of the Test Cities, was providing dispatchable location or x/y location information within 50 meters for 50 percent of all wireless 911 calls, had deployed the indoor location technology or technologies used in its networks consistently with the manner in which such technologies have been tested in the test bed, and had verified based on its own live call data that it was in compliance with the two-year benchmark set forth at 47 CFR § 20.18(i)(2)(i)(B)(2).

August 1, 2018

A Non-Nationwide Carrier Live 911 Call Report was submitted to the FCC in PS Docket No. 07-114 on or before August 1, 2018, providing aggregate live 911 call data covering reporting period January through June 2018, for SBI's network, and the report was sent to NENA, APCO and NASNA.

August 3, 2018

SBI makes available to PSAPs uncompensated barometric data for any 911 call placed from any handset that has the capability to deliver barometric sensor data, in compliance with 47 C.F.R. § 20.18(i)(2)(ii)(A).

SBI has adopted procedures that comply with FCC indoor accuracy requirements:

SBI retains for two years all testing and live call data gathered for Non-Nationwide Carrier Live 911 Call Reports, pursuant to 47 C.F.R. § 20.18(i)(3)(iii).

SBI delivers x- and y-axis (latitude, longitude) confidence and uncertainty (C/U) data for all wireless 911 calls - whether placed from indoors or outdoors - at the request of a Public Safety Answering Point (PSAP), on a per-call basis, with a uniform confidence level of 90 percent, per 47 CFR § 20.18(j).

SBI collects and retains for two years information on all wireless 911 calls placed on its network, including the positioning source method used to provide a location fix associated with the call, The data is made available to PSAPs upon request in accordance with 47 CFR § 20.18(k).

SBI will continue to meet FCC indoor location accuracy requirements of 47 CFR § 20.18, utilizing the expertise of highly qualified providers of E911 technology services. West Safety Services ("West") provides SBI with Location Performance Management (LPM) and Accuracy Compliance Testing. West's LPM compiles and aggregates complex data sets to help manage, optimize and report location accuracy, while complying with the FCC's wireless E911 location regulations. LPM provides key insights to help manage 911 caller location and identify areas for improvement:

- Pinpoint location performance issues
- Optimize network functionality to certify and trust location performance
- Perform proactive risk management of position determination issues
- Report compliance with the FCC's location accuracy rules
- Audit Key Performance Indicators, call results, and location server performance
- Measure baseline accuracy results in test areas
- Resolve position determination discrepancies

West's LPM provides three reports to assess FCC compliance:

- Live Call Data Report - provides Live Call Data yields by technology and morphology semi-annually for any reporting county

- 50m Accuracy Report - provides data for the largest county in the wireless network footprint, weighting Indoor Test Bed data derived from Test Bed, LLC against live 911 call distribution within the reporting area to determine a final location accuracy metric

- PSAP Report - provides the total number of calls delivered to a specific Public Safety Answering Point and can be generated on demand for a given period as needed

West performs testing, conducts test calls and updates BSA information. West's accuracy compliance testing services include:

Test existing PSAP or county locations
Ensure FCC compliance and reporting
Achieve BSA optimization
Measure accuracy drive testing
Perform BSA generation and calibration
Perform BSA optimization and maintenance
Generate calibration test points

Further, it is noted that West supports Uncompensated Barometric Pressure (UBP) at the Enhanced-Serving Mobile Location Center (E-SMLC) and Gateway Mobile Location Center (GMLC), the West Fixed Mobile Convergence Center (FMCC).

The E-SMLC queries the device using the Open Mobile Alliance (OMA) LTE Positioning Protocol extension (LPPe) 1.0 protocol carried inside the 3GPP LPP protocol for the UBP as measured by the User Equipment (UE), i.e. device. The UBP value, if received, is included in the Location Services – Application Protocol (LCS-AP) response message that is sent to the Mobility Management Entity (MME) at the end of the location procedure. The E-SMLC does not perform validation of the barometric pressure value received from the device.

The GMLC parses UBP from the SLg interface, between the GMLC and MME, LRR and PLA messages, per the TS 29.172 Release 13.0 standard, stores it internally, and includes it in the E2 ESPOSREQ response, per the guidance in ATIS-0700028. Once UBP is received for a call, it is included in all ESPOSREQ responses (if configured as "allowed" for the applicable PSAP), regardless of the query type (Initial, Updated, Updated or Last), and regardless if the UBP has been updated or not. It is assumed that if a UE supports delivery of UBP, it will supply UBP for all location updates, therefore the value will always be current with the latest latitude/longitude.

Finally, location accuracy data reports provided by West align with ATIS 05000031 recommendations, which provide the option to blend outdoor accuracy test data with indoor test bed data and live 911 call data. Sector Morphology assignments are based on the greatest percentage of morphology present in a sector which is then assigned to all 911 calls from that sector. The data selected for the reporting area's 911 call distribution utilizes the best final fix for

the call, which includes using the first fix when the PSAP did not perform a rebid. This data excludes known test calls. Uninitialized calls, short calls or aborted calls may be excluded in the manual report.

SBI and West will continue to incorporate technological advancements to enhance the safety of emergency callers by delivering accurate and useful location information to emergency dispatch personnel, in keeping with FCC requirements and timelines.

Justin E. Hinkle, CEO/President

Date: 07-31-2018